To: UBC VCL Project Managers and Undergraduate Research Assistants

From: Daniel Chen

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Subject: Proposal for Improving Documentation Practices at the UBC Visual Cognition Lab

**Introduction**

The University of British Columbia Visual Cognition Lab (UBC VCL) is a research lab that investigates visual intelligence (the way in which the human visual system uses light entering the eyes to create a variety of perceptual experiences). The lab is comprised of multiple project leaders and approximately 30 undergraduate research assistants with a very high turnover rate. Since I’ve started working at the UBC VCL, there have been a few notable incidents that have led to the obtainment of unusable data. As a result, there has been a considerable reduction in productivity.

**Statement of Problem**

The root cause of unusable data leads back to inadequate documentation practices by previous undergraduate research assistants, propagating down to the current generation of researchers. Due to the poor documentation practices, experiments were run under inconsistent environments between trials, leading to incomparable and meaningless data. As a result, a significant amount of hard work, time, and funding could have been allocated elsewhere.

**Proposed Solution**

One possible solution to the problem of poor documentation is to implement a centralized archiving system along with a protocol outlining the steps for effective documentation of experiments and organized storage of experimental data. The system will allow for documents and data files to be stored online where it can be easily accessed by research assistants, previous and current.

**Scope**

To assess the feasibility of introducing a documentation protocol, I plan to pursue the following areas of inquiry:

1. What options are there for implementing a centralized archiving system?
2. What is the approximate cost associated with introducing the system?
3. How long would the purchase and implementation of the system take?
4. How seamlessly can the new system be integrated?
5. How will we import current documentation into the new system?
6. How difficult would it be for research assistants to learn? Will there be training required?
7. Will there be an improvement in documentation practices? If so, how much of an improvement?

**Methods**

My primary source of research will come from conducting surveys with undergraduate research assistants at the UBC VCL, especially those who carry out the documentation process associated with each experiment. I will also perform a daily inspection of a subset of documents recorded by research assistants, and determine the specific causes contributing to poor documentation and lack of organization.

Secondary sources will include publications on effective documentation practices and collaboration techniques in a research environment.

**My Qualifications**

As the technical manager at the UBC VCL, I interact with project managers and research assistants on a regular basis, providing general and urgent technology support in the lab. As a third year computer science student, I have experience in various requirements elicitation techniques, analyzing the results of the elicitation, and specifying the requirements. I have also taken a course on the principles of designing an efficient database management system for storing information. My experience and familiarity of the technology used in the lab will greatly assist me in finding areas of improvement and discovering a solution.

**Conclusion**

It is clear that action is needed to improve productivity by reducing setbacks related to poor documentation practices. Due to the high turnover rate, effective documentation is crucial in allowing the lab to run smoothly and efficiently. Through further research of the aforementioned areas of inquiry, I can determine the feasibility of improving the accuracy of experimental documentation and organization of archived data. With your approval, I will begin my research immediately.